

Title: A FRAMEWORK FOR THE GENERATION AND DISSEMINATION OF DROP SIZE DISTRIBUTION (DSD) CHARACTERISTICS USING MULTIPLE PLATFORMS

Presentation type: Poster

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Proper characterization of the precipitation drop size distribution (DSD) is integral to providing realistic and accurate space- and ground-based precipitation retrievals. Current technology allows for the development of DSD products from a variety of platforms, including disdrometers, vertical profilers and dual-polarization radars. Up to now, however, the dissemination or availability of such products has been limited to individual sites and/or field campaigns, in a variety of formats, often using inconsistent algorithms for computing the integral DSD parameters, such as the median- and mass-weighted drop diameter, total number concentration, liquid water content, rain rate, etc. We propose to develop a framework for the generation and dissemination of DSD characteristic products using a unified structure, capable of handling the myriad collection of disdrometers, profilers, and dual-polarization radar data currently available and to be collected during several upcoming GPM Ground Validation field campaigns. This DSD super-structure paradigm is an adaptation of the radar super-structure developed for NASA's Radar Software Library (RSL) and RSL_in_IDL. The goal is to provide the DSD products in a well-documented format, most likely NetCDF, along with tools to ingest and analyze the products. In so doing, we can develop a robust archive of DSD products from multiple sites and platforms, which should greatly benefit the development and validation of precipitation retrieval algorithms for GPM and other precipitation missions. An outline of this proposed framework will be provided as well as a discussion of the algorithms used to calculate the DSD parameters.